

High-Performance Training: A Coaching & Training Manual

By Coach Shan AI

1. Introduction: The Inclusive High-Performance Framework

This manual establishes a strategic framework for elite wrestling, integrating the multidisciplinary findings of the 2008 U.S. Olympic Training Center Training Design Symposium. Our objective is to synthesize world-class sports science with a robust inclusive coaching philosophy. By applying data-driven protocols, we eliminate the subjective biases that often hinder the development of a diverse squad, ensuring that all skill levels have an equitable path to the podium.

Core Principles

- **Scientific Equity:** All training prescriptions are rooted in the physiological data presented by USOTC experts to ensure performance standards are applied consistently across all skill levels.
- **Psychological Safety as Performance:** Establishing a high-performance environment where the performance experiences of athletes are integrated into the team's tactical identity, not treated as external distractions.
- **Authoritative Individualization:** Using the Director's oversight to ensure that while the team trains as one, the specific recovery & metabolic profiles of each athlete are monitored with clinical precision.

2. Foundations of Training Design (Prep Phase)

Successful training design requires a synthesis of Meg Stone's "General Prep" (building the physiological engine) & Gregg Ryan's "Coach Training Design" (the technical blueprint). For the modern wrestler, the General Prep phase must focus on the posterior chain, grip strength, & core stability to provide the physical capacity required for Ryan's technical systems.

General Prep Phase Objectives:

- **Aerobic Foundation:** Low-intensity, steady-state work to enhance mitochondrial density, facilitating faster recovery between high-intensity wrestling rounds.

- **Structural Hypertrophy:** Targeted resistance training focusing on the posterior chain (glutes, hamstrings, lower back) & grip strength to ensure technical durability during tie-ups & par terre.
- **Technical Stance Stability:** Establishing a baseline of isometric strength in wrestling-specific positions before advancing to high-velocity movement.
- **Inclusive Adaptations:**
 - Assess and address the specific power-to-weight ratio baselines of female athletes to ensure strength loads are progressive & injury-preventative.
 - Implement baseline metabolic testing for all athletes to account for diverse off-season backgrounds & nutritional starting points.

3. Energy Pathways & Nutritional Periodization

Mastering the transition between aerobic & anaerobic systems is essential for late-match dominance. This protocol merges the metabolic insights of Krista Austin, Ph.D. (Energy Pathways) with the periodized fueling strategies of Bob Seebohar, RD.

Nutritional & Metabolic Strategies by Training Intensity

Training Intensity Level	Primary Energy Pathway	Nutritional Requirements	Inclusive Considerations
Low (Base/Recovery)	Aerobic	High-quality fats; lean protein; hydration focused on mineral balance.	Prioritize Vitamin D supplementation for athletes with indoor training: indoor training limits synthesis & impacts bone health/recovery.
Moderate (Technical/Drill)	Mixed (Aerobic/Anaerobic)	Balanced macros; complex carbohydrates for sustained glucose release.	Ensure recommended complex carbohydrates (e.g., grains, tubers) to the all athletes.

High (Live/Match)	Anaerobic (Glycolytic)	High glycogen availability; post-session protein (20-30g) for muscle repair.	Monitor for RED-S (Relative Energy Deficiency in Sport) in female athletes to prevent long-term metabolic & hormonal disruption.
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4. Psychological Skills Training (PST) & Team Planning

Mental performance is not an innate trait; it is a periodized skill. We integrate the seasonal PST framework of Gloria Balague, Ph.D. with the organizational planning of Clive Brewer to ensure the team peaks psychologically & physically in unison.

Seasonal Mental Skills Curriculum:

1. **Prep Phase:** Establishment of individual "Performance Identity" & team-wide core values.
2. **Pre-Competition Phase:** Master of arousal regulation & "reset triggers" for high-pressure scrambles.
3. **Competition Phase:** Visualization of match scenarios & the solidification of pre-match psychological routines.
4. **Transition Phase:** Controlled reflection & psychological unloading to prevent burnout.

Coach-to-Athlete Communication Examples:

- **Standardizing Support:** "Our performance standard is built on psychological safety. If the team dynamic or external pressures are impeding your ability to execute at your peak, my door is open to adjust our tactical approach immediately."
- **Addressing the New Athlete Experience:** "I recognize the unique pressure of being a pioneer in this high-performance space. Your focus belongs on your technical execution; I am here to manage the environment so that your effort is the only thing that defines your results."
- **Empowering the Taper:** "We are currently reducing volume to allow your nervous system to supercompensate. Trust the science of the plan; your explosive power is being intentionally primed for the tournament."

Performance Evaluation & Modeling ↓

5. Performance Evaluation & Modeling

Objective evaluation is the only antidote to coaching bias. Following the methodologies of Bill Sands, Ph.D. & Scott McLean, Ph.D., we utilize specific, data-driven KPIs for the wrestling environment.

Key Performance Indicators (KPIs):

- [] **Mat Return Frequency:** Success rate of returning opponents to the mat from a standing or defensive position.
- [] **Short Offense Efficiency:** Conversion rate of front headlock & sprawl positions into scoring actions.
- [] **Posterior Chain Power:** Measured via peak velocity in the trap-bar deadlift or clean pull.
- [] **Recovery Heart Rate:** Time required for the athlete to return to 60% of Max HR following a 3-minute live segment.
- [] **Technical Shot Ratio:** Data-driven tracking of takedown attempts versus successful finishes during live sessions.

6. Recovery and Overtraining Prevention

High-performance training is only as effective as the recovery that follows. We integrate the physiological monitoring of Randy Wilbur, Ph.D. with the multidimensional recovery pillars of Michael Kellman, Ph.D.

Multi-Dimensional Recovery Protocol

Sleep Hygiene: Ideally, minimum 8.5 hours of sleep in a temperature-controlled environment (<68°F) to optimize growth hormone secretion. **Active Recovery:** Non-impact movement (swimming or cycling) at <50% Max HR to facilitate metabolic byproduct removal without neural load. **Psychological Unloading:** Total detachment from wrestling-specific stimuli for 24-hour blocks to refresh cognitive focus.

Diagnostic Commands for Coaches:

- **Step 1:** Conduct a daily "Wellness Check-in" assessing sleep quality, mood, & perceived soreness on a 1-10 scale.
- **Step 2:** Monitor explosive output. If vertical jump or grip strength drops >10% over 2 consecutive sessions, trigger an immediate 24-hour psychological & physical unloading

block.

- **Step 3 (Female Athletes):** Review menstrual cycle logs monthly; any irregularity must trigger a medical evaluation for RED-S & a caloric intake adjustment.
- **Step 4 (Male Athletes):** Monitor for sudden onset of irritability & a plateau in strength metrics as primary indicators of sympathetic nervous system overtraining.

7. Tapering & Competition Phase Management

The taper is a surgical reduction in workload. We follow the evidence-based models of Inigo Mujika, Ph.D. & Cliff English to ensure the athlete is at their absolute peak on the day of competition.

Olympic 14-Day Peak Performance Taper Countdown:

- **Days 14-10:** Cut total training volume by 20%. Keep live wrestling segments short but at 100% match intensity.
- **Days 9-5:** Reduce volume by a further 40%. Focus exclusively on "first-touch" scoring & explosive finishes. Limit total mat time to 45 minutes.
- **Days 4-2:** Volume reduction reaches 60%. Focus on visualization, weight management, & tactical review. Mat work is limited to activation & movement.
- **Day 1:** 20-minute activation session. Sharp, explosive movements followed by total rest & rehydration.
- **College/High School:** Must modify above in 1-2 days except for national/state qualifiers

Competition Phase Non-Negotiables:

- **Maintain Intensity:** You must **keep the intensity of drills at match-speed** to ensure the neuromuscular system remains primed for explosive action.
- **Reduce Volume:** You must **drastically cut the number of sets & total duration** to allow for physiological supercompensation.
- **Preserve Specificity:** Every movement during this phase must **mimic the exact technical demands of a match** to keep the athlete's spatial awareness sharp.

8. Transition & Off Season

Post-season management, as outlined by Arild Jorgensen, is critical for long-term athlete retention & health across a diverse squads.

Three-Point Active Off-Season Plan:

1. **Functional Diversification:** Direct athletes toward non-wrestling activities that correct sport-specific muscle imbalances & maintain general athleticism.
2. **Clinical Audit:** Conduct a full orthopedic & metabolic review for every athlete to address lingering injuries & nutritional deficiencies (e.g., Iron & Vitamin D levels).
3. **Retention Review:** Execute one-on-one "Performance Summits" to ensure the program's inclusive standards are meeting the athlete's long-term career and personal goals.

9. Closing Directive: Maintaining an Inclusive Environment

Coach's Directive: You are commanded to treat the synthesis of sports science competency as a single, unified discipline. Continuous education is not optional. You must actively update your training models with objective data while remaining hyper-aware of the cultural dynamics within your squad. High performance training is only achieved when every athlete, regardless of skill level, has an equal opportunity to reach their physiological & psychological peak. Execute this manual with the authority of a scientist & the empathy of a consultant.

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